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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/748,391	12/27/2000	David Ian Allen	92118-17	3774

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EXAMINER

GOLD, AVI M

ART UNIT	PAPER NUMBER
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2157

DATE MAILED: 02/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/748,391	ALLEN, DAVID IAN	
	Examiner	Art Unit	
	Avi Gold	2157	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 October 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The amendment received on October 21, 2004 has been entered and fully considered.

Response to Amendment

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 5, 9, 15-17, 21, and 22 are rejected under 35 U.S.C. 102(e) as being anticipated by Tomizawa et al., U.S. Patent No. 6,202,082.

Tomizawa teaches the invention as claimed including trunk transmission systems in which communication involves setting up paths semi-permanently on physical transmission lines (see abstract).

Regarding claim 1, Tomizawa teaches a method of establishing a subsequent path across a network to be used to transport traffic carried along an initial path in the event of a failure or signal degradation on said initial path, said method comprising:

receiving a digest representative of resources used along said initial path, each of said resources along said initial path known by at least one node on said initial

path (col. 4, lines 6-25; Tomizawa discloses a control channel exchanging control signals with other nodes, col. 4, line 57 - col. 5, line 14, col. 13, lines 15-40, Tomizawa discloses restoration of a path by re-routing a new path and the use of a token);

establishing said subsequent path, using said digest so that said subsequent path may use resources distinct from said resources used along said initial path (col. 4, lines 6-25, Tomizawa discloses a path setup in accordance with the required service class; col. 4, line 57 - col. 5, line 14, col. 13, lines 15-40).

Regarding claim 5, Tomizawa teaches the method of claim 1, wherein each of said nodes on said initial path contributes knowledge known thereat to form said digest (col. 4, lines 6-25; Tomizawa discloses path setup methods based on nodes).

Regarding claim 9, Tomizawa teaches a method of forming a digest of information representative of network resources along a path, comprising at each node along said path, adding to said digest, an indicator of resources used by said path and known to that node (col. 4, lines 6-25; Tomizawa discloses intermediate nodes placing a stamp on a packet based on bandwidth availability).

Regarding claim 15, Tomizawa teaches a network node along a path, comprising a processor operable to pass an indicator of resources used along said path, known to said network node to an adjacent node on said path (col. 4, lines 6-25).

Regarding claim 16, Tomizawa teaches the network node of claim 15, configured with local knowledge of local resources used by paths including said network node (col. 4, lines 6-25).

Regarding claim 17, Tomizawa teaches the node of claim 16, wherein said node is further operable to

- receive a digest of resources used along said path;
- add said indicator to said digest;
- and pass said digest to said adjacent node (col. 4, lines 6-25).

Regarding claim 21, Tomizawa teaches a node on a communications network operable to establish a secondary path across said network, said secondary path capable of carrying traffic carried along an initial path, in the event of a fault or signal degradation along said initial path, said node operable to use a digest representative of resources used along said initial path in establishing said secondary path, each of said resources along said initial path known by at least one node on said initial path, so that said secondary path may be established using resources distinct from said resources used along said initial path (col. 2, lines 34-62; Tomizawa discloses paths re-routed around a failure; col. 4, lines 6-25; Tomizawa discloses a control channel exchanging control signals with other nodes, col. 4, line 57 - col. 5, line 14, col. 13, lines 15-40).

Regarding claim 22, Tomizawa teaches computer readable medium storing processor executable instructions that when loaded at a node capable of establishing a path on a network, adapt said node to pass an indicator of resources used along an established path and known to said network node to an adjacent node on said established path (col. 4, lines 6-25, Tomizawa discloses a control channel exchanging control signals with other nodes and a path setup in accordance with the required service class; col. 4, line 57 - col. 5, line 14, col. 13, lines 15-40).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2-4, 6-8, 10-14, and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tomizawa further in view of Furlani, U.S. Patent No. 5,813,000.

Tomizawa teaches the invention substantially as claimed including trunk transmission systems in which communication involves setting up paths semi-permanently on physical transmission lines (see abstract).

As to claims 2 and 10, Tomizawa teaches the method of claims 1 and 9.

Tomizawa fails to teach the limitation further including the use of a Bloom filter to represent resources known to each node.

However, Furlani teaches a novel B tree structure and method (see abstract).
Furlani shows evidence of the use of Bloom filters (col. 4, lines 66-67; col. 5, lines 1-19).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Tomizawa in view of Furlani to use a Bloom filter to represent resources. One would be motivated to do so because Bloom filters use little memory, which would allow it to function as a resource digest without interfering with network performance.

As to claims 3 and 11, Tomizawa and Furlani teach the method of claims 2 and 10.

Tomizawa fails to teach the limitation further including the Bloom filter having a fixed number of bits.

However, Furlani teaches the use of a Bloom filter with 40 bits based on a bucket size of 10 (col. 8, lines 27-34).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Tomizawa in view of Furlani to use a Bloom filter with a fixed number of bits. One would be motivated to do so because it would allow for a more efficient hash function.

As to claim 4, Tomizawa teaches the method of claim 3, further comprising adding information representing said resources along said initial path to said Bloom filter

at each of said nodes (col. 4, lines 6-25; Tomizawa discloses decisions made based on available bandwidth).

As to claim 6, Tomizawa teaches the method of claim 4, wherein said initial path extends from an originating node to a terminating node on said network, and said digest is received at said originating node (col. 4, lines 6-25; Tomizawa discloses path setup done prior to transmission of information).

As to claim 7, Tomizawa teaches the method of claim 6, wherein said digest is received as a part of a message confirming establishment of said initial path (col. 4, lines 6-25; Tomizawa discloses a path setup allowing a route to be confirmed by a control channel).

As to claim 8, Tomizawa teaches the method of claim 7, wherein said establishing comprises providing said digest to each node along said subsequent path (col. 4, lines 6-25).

As to claim 12, Tomizawa teaches the method of claim 10, wherein said path extends from an originating node to a terminating node, and wherein said digest is formed as confirmation of establishment of said path is passed from said terminating node to said originating node (col. 4, lines 6-25).

As to claim 13, Tomizawa teaches the method of claim 12, wherein said resources comprise physical resources used along said path (col. 4, lines 6-25; Tomizawa discloses bandwidth availability)

As to claim 14, Tomizawa teaches the method of claim 13, wherein said resources comprise at least one of physical port and a physical interconnect used by said path (col. 4, lines 6-36; Tomizawa discloses a token protocol and routes based on network configuration).

As to claim 18, Tomizawa teaches the node of claim 17.

Tomizawa fails to teach the limitation further including wherein said digest comprises a Bloom filter, and said node is operable to modify said Bloom filter to reflect said resources used along said path, known to said network node.

However, Furlani shows evidence of the use of Bloom filters (col. 4, lines 66-67; col. 5, lines 1-19).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Tomizawa in view of Furlani to use a Bloom filter to represent resources.

As to claim 19, Tomizawa teaches the node of claim 18, wherein said indicator is formed as said node acknowledges formation of said path (col. 4, lines 6-25).

As to claim 20, Tomizawa teaches the node of claim 19, wherein said path extends from an originating node to a termination node on said network, and said indicator is passed upstream towards said originating node along said path (col. 4, lines 6-25).

Response to Arguments

5. Applicant's arguments filed October 21, 2004 have been fully considered but they are not persuasive. Regarding the argument to claims 1, 15, 21, and 22, the applicant argues that the reference, Tomizawa, does not disclose a digest of resources and indicator of resources. The examiner disagrees, as seen in column 4, line 57 - column 5, line 14 and column 13, lines 15-40, there is a digest of resources and indicator of resources shown as the restoration of a path by re-routing a new path based on known past resources used and the use of a token.

6. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Pat. No. 5,931,916 to Barker et al.

U.S. Pat. No. 6,205,146 to Rochberger et al.

U.S. Pat. No. 6,542,461 to Faye et al.

U.S. Pat. No. 6,563,798 to Cheng.

U.S. Pat. No. 6,594,235 to Rochberger et al.

U.S. Pat. No. 6,202,124 to Kern et al.

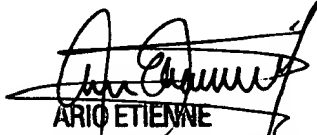
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Avi Gold whose telephone number is 571-272-4002. The examiner can normally be reached on M-F 8:00-5:30 (1st Friday Off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Etienne can be reached on 571-272-4001. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Avi Gold
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